# THE
# ART

## Of Apparelling and Fitting of any

# SHIP

### WITH

# Masts, Yards, and Cordage

Wherein
Is shewed a true Proportion for the Masting, Yarding, and Apparelling of any Ship, whose Length, Breadth, and Depth is known: With Rules for the Sizes and Lengths of all sorts of Cordage that belongs to any SHIP.

All which is performed by a *Scale*, called

## THE MARINERS SCALE,

Or by the two Sliding Lines of Numbers.

Whereby,
If the Length and Thickness of the Main-Mast be accounted upon it, there may be found (only by inspection) the length and thickness of all the other Masts and Yards, and also the Sizes, the Lengths, and the total number of Fathoms of every size Cordage, for the Apparelling of any Ship, without using of Compasses or altering the *Scale*.

### The Third Impression,

Carefully Corrected and Amended, by *HENRY BOND.*

# TO THE
# READER.

Courteous Reader,

THou haſt here preſented to thee in a new way, an exact method and direction, for the Apparelling and Fitting of any SHIP with Maſts, Yards, and Cordage. There is nothing expected from any by the Author, but a charitable cenſure : If there be any that have no occaſion to uſe it, I deſire them not to deſpiſe it, leſt themſelves do ſomething more deſpicable. I hope ſome young men (Sea-men) will reap ſome benefit by it, which to the Author ſhall be more than ſuperabundant ſatisfaction.

VALE

# The Particulars contained in this Tract.

1. A *Table of the Lengths and Thickness of all the Masts and Yards belonging to a ship of six hundred tuns.*

2. *A Table of all the Names, Sizes and Lengths of all the Cordage, belonging to the Apparelling of the same ship, beginning at the least size, and going on to the greatest. The quantity of each size by it self.*

3. *A Table of the Names, Sizes and Lengths of some other Cordage and Ropes that are of necessity in a ship, and are for the fore-propounded ship.*

4. *A Table of the Lengths and Thickness of all the Masts and Yards belonging to a ship of 448 tuns.*

5. *A Table of all the Sizes and Lengths of the Cordage belonging to the Apparelling of the said ship, the Cordage of each Mast by it self, as the Main-Mast, Main-Top Mast, Main-Top-Gallant-Mast, and the rest in order.*

6. *The use of the Mariners Scale in finding the Masts, Yards and Cordage of any other ship, from either of these two ships propounded.*

7. *A Table containing the number of Fathoms and odd Feet that are contained in one hundred weight of any Cordage, from one Inch to ten Inches circumference.*

Note; *The Scales are made either in Brass or Wood, by* Joseph Hone, *in the Bulwark near the* Tower.

# A Table of the Lengths and Thickness of

the Masts and Yards of a Ship that is 94 foot and a
halfe by the Keele, 37 foot at the Beam, and
16 foot and an halfe in Hold, which
is of the burthen of about
600 Tunne.

*All which Masts and Yards are very neer in continuall
proportion one to another in their lengths.*

| | Length in Feet | Thickness in Inches. |
|---|---|---|
| The Sprit-sail Top-sail Yard | 18.50 | 5 |
| The Fore-top-gallant Yard, and the Sprit-sail | 18 | 5.50 |
| The Main-top-gallant Yard (Top-mast | 23 | 8 |
| The Fore-top-gallant Mast | 24 | 8 |
| The Mizne Top-sail Yard | 26 | 8 |
| The Main top-gallant Mast | 28.50 | 10 |
| The Mizne Top-mast | 34 | 10 |
| The Fore-top-sail Yard | 39 | 12 |
| The Main-top-sail Yard | 46 | 14 |
| The Crosse-jeck Yard | 42 | 9.50 |
| The Fore-top-mast | 47 | 17 |
| The main-top-mast | 55 | 18 |
| The Sprit-sail yard | 73 | 21 |
| The mizne-mast | 66 | 22 |
| The Mizne yard | 65 | 20 |
| The Fore-yard | 70 | 25.50 |
| The Bousprite | 85 | 28 |
| The main-yard | 93 | 30 |
| The Fore-mast | 95 | 31.50 |
| The main-mast | 107 | 36 |

B                                                                    A

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Note ; *The Scales are made either in Brass or Wood,* by Joseph Hone, *in the* Bulwark *near the* Tower.

A

# A Table of the Lengths and Thickneſs of
### the Maſts and Yards of a Ship that is 94 foot and a halfe by the Keele, 37 foot at the Beam, and 16 foot and an halfe in Hold, which is of the burthen of about 600 Tunne.

*All which Maſts and Yards are very neer in continuall proportion one to another in their lengths.*

| | Length in Feet | Thickneſs in Inches. |
|---|---|---|
| THe Sprit-ſail Top-ſail Yard | 18.50 | 5 |
| The Fore-top-gallant Yard, and the Sprit-ſail | 18 | 5.50 |
| The Main-top-gallant Yard (Top-maſt | 23 | 8 |
| The Fore-top-gallant Maſt | 24 | 8 |
| The Mizne Top-ſail Yard | 26 | 8 |
| The Main top-gallant Maſt | 28.50 | 10 |
| The Mizne Top-maſt | 34 | 10 |
| The Fore-top-ſail Yard | 39 | 12 |
| The Main-top-ſail Yard | 46 | 14 |
| The Croſſe-jeck Yard | 42 | 9.50 |
| The Fore-top-maſt | 47 | 17 |
| The main-top-maſt | 55 | 18 |
| The Sprit-ſail yard | 73 | 21 |
| The mizne-maſt | 66 | 22 |
| The Mizne yard | 65 | 20 |
| The Fore-yard | 79 | 25.50 |
| The Bouſprite | 85 | 28 |
| The main-yard | 93 | 30 |
| The Fore-maſt | 95 | 31.50 |
| The main-maſt | 107 | 36 |

B
A

## A Table of the sizes, the names, the number, and the lengths, of each Cordage for Apparelling, belonging to the fore-propounded Ship.

### 1. Cordage of 1 inch $\frac{40}{100}$ parts.

|   |   | Fathã | Fathã |
|---|---|---|---|
| 2 | Fore Top-gallant Braces | 32 | 64 |
| 4 | Fore Top-gallant Boling Bridles | 1.50 | 6 |
| 2 | Fore Top-gallant Lifts | 28 | 56 |
| 8 | Main Top-gallant Lanniards | 2.50 | 20 |
| 4 | Main Top-gallant boling bridles | 1.50 | 6 |
| 1 | Main Flag-ftaffe ftay | 17 | 17 |
| 8 | Mizne Top-maft Lanniards | 2.50 | 20 |
| 1 | Fale of the Sprit-fail Top-fail Crain-lines | 48 | 48 |
| 2 | Mizne Top-fail Bolings | 16 | 32 |
| 2 | Mizne Top-fail Braces | 22 | 44 |
| 34 |   |   | 313 |

### 2. Cordage of 1 inch $\frac{60}{100}$ parts.

|   |   |   |   |
|---|---|---|---|
| 8 | Lanniards of the Sprit-fail Top-maft Shroud | 2.50 | 20 |
| 2 | Fales of the Sprit-fail Top-maft tackles | 5.50 | 15 |
| 1 | Fales of the Sprit-fail Crain-lines | 21.50 | 21.50 |
| 1 | Sprit-fail top-fail Halliards | 7.50 | 15 |
| 2 | Sprit-fail Top-yardes Lifts | 6 | 12 |
| 2 | Pennants of the Sprit-fail Top-fail Braces | 1.50 | 3 |
| 2 | Sprit-fail Top-fail Braces | 12 | 24 |
| 2 | Sprit-fail Top-fail Clue-lines | 12 | 24 |
| 2 | Fore-top-maft tackle Fales | 16 | 32 |
| 2 | Fales of the Fore-top gallant Back-ftaies | 21.50 | 43 |
| 1 | Fore-top-gallant Halliards | 38 | 38 |
| 2 | Pennants of the Fore-top-gallant Braces | 2.50 | 5 |
| 2 | Fore-top-gallant Bolines | 30 | 60 |

Fore-

| | | Fathŏ | Fathŏ |
|---|---|---|---|
| 2 | Fore-top-gallant Clue-lines | 26 | 52 |
| 6 | Fore-top-gallant Lanniards | 2 | 12 |
| 2 | Fales of the Main-top-gallant Tackle | 8 50 | 17 |
| 2 | Fales of the Main-top-gallant Back staies | 24 | 48 |
| 2 | Main-top-gallant Lifts | 28 | 56 |
| 2 | Main-top-gallant Braces | 33 | 66 |
| 2 | Main-top-gallant Bolines | 28 | 56 |
| 8 | Mizne Brailes | 9.50 | 76 |
| 2 | Mizne top-maſt Tackle Fales | 11 | 22 |
| 1 | Fale of the Mizne Top-saile Crain-lines | 42 | 42 |
| 6 | Mizne Top-sail Boline Bridles | 1.25 | 7.50 |
| 2 | Pennants of the Mizne Top-sail Braces | 1.50 | 3 |
| 2 | Croſſe Jeck Braces | 24 | 48 |
| 2 | Fore-top-sail Leech-lines | 12 | 24 |
| 69 | | | 842 |

## 3. Cordage of 2 inches $\frac{30}{100}$ parts.

| | | | |
|---|---|---|---|
| 2 | Lanniards of the Sprit-sail ſtanding Lifts | 4 | 8 |
| 4 | Fore Martlines Leggs | 7 | 28 |
| 2 | Lanniards for the Foreyard Hoſſes | 7.50 | 15 |
| 8 | Lanniards for the fore-top-maſt Shroudes | 2.50 | 20 |
| 2 | Fore-top-sail Braces | 28 | 56 |
| 4 | Fore-top-sail Boline Bridles | 3 | 12 |
| 2 | Fore-top-gallant Parrel Ropes | 1.50 | 3 |
| 10 | Lanniards of the Main-top-maſt Shrouds | 3.50 | 35 |
| 2 | Main-top-sail Braces | 28 | 56 |
| 2 | Main-top-sail Leech-lines | 14 | 28 |
| 2 | Main-top-gallant Clue-lines | 30 | 60 |
| 2 | Pennants of the Main-top-gallant Braces | 1.50 | 3 |
| 10 | Lanniards of the Mizne Shrouds | 3.50 | 35 |
| 2 | Pennants of the Croſſe Jeck Braces | 2.50 | 5 |
| 2 | Slings for the Croſſe Jeck Yard | 2.50 | 5 |

Pen.

| | | Fathã | Fathã |
|---|---|---|---|
| 2 | Pennants of the mizne top-fail Crain-lines | 2 | 4 |
| 1 | Mizne top-fail Halliards in three parts | 36 | 36 |
| 2 | Mizne top-fail Clue-lines | 17 | 34 |
| 61 | | | 443 |

## 4. Cordage of 2 inches $\frac{9^0}{100}$ parts.

| | | | |
|---|---|---|---|
| 2 | Sprit-fail Braces | 18 50 | 37 |
| 2 | Sprit-fail Clue-lines | 13 | 26 |
| | Sprit fail Bunt-lines in two parts | 25 | 25 |
| 8 | Sprit-maft Top-maft Shrouds | 4 | 32 |
| 2 | Pennants of the Sprit-fail Top-maft Tackle | 1.50 | 3 |
| 3 | Pennants of the Sprit-fail top-fail Crain-line | 3 | 9 |
| 10 | Puttox of the Sprit-fail top-maft fhrouds | 1.50 | 15 |
| 2 | Sprit-fail top-maft Parrel Ropes | 1.50 | 3 |
| 2 | Fore-fails mart-lines Fales | 35 | 70 |
| 5 | Fore fail bunt lines | 19 | 95 |
| 2 | Fore braces | 18 | 36 |
| 2 | Fore top fail Lifts | 20 | 40 |
| 2 | Falls of the foretop maft back ftaies | 5.50 | 11 |
| 2 | Pennants of the Fore top fail Braces | 2.50 | 5 |
| 1 | Lanniard of the fore top maft ftay | 6 | 6 |
| 2 | Fore top fail bauk lines | 32 | 64 |
| 2 | Fore top fail bunt lines | 12 | 24 |
| 2 | Pennants of the fore top gallant back ftaies | 3 | 6 |
| 1 | Fore top gallant tie | 5 | 5 |
| 6 | Fore top gallant puttox | 1.50 | 9 |
| 1 | Fore top gallant ftay | 21 | 21 |
| 1 | Fore top gallant top rope | 32 | 32 |
| 6 | Fore top gallant Shrouds | 4.50 | 27 |
| 4 | Main fail mart lines legs | 9.50 | 38 |
| 2 | Falls of the main top maft tackles | 18 | 36 |
| 2 | Lanniards of the main top maft back ftaies | 6 | 12 |

Main.

| | | Fath̄ | Fath̄ |
|---|---|---|---|
| 2 | Main-top-sail lifts | 30 | 60 |
| 2 | Main-top-sail bunt-lines falls. | 21 | 42 |
| 2 | Main-top-sail bunt-lines legs | 12 | 24 |
| 2 | Pennants of the main-top-gallant tackles | 3 | 3 |
| 2 | Pennants of the main-top-gallant back-stayes | 2.50 | 5 |
| 1 | Main-top-gallant halliards | 43 | 43 |
| 10 | Main-top-gallant puttox | 2 | 20 |
| 2 | Main-top-gallant parrel ropes | 1.50 | 3 |
| 2 | Falls of the mizne tackles | 19 | 38 |
| 1 | Mizne trusse | 14 | 14 |
| 1 | Mizne bowling | 6 | 6 |
| 2 | Pennants of the mizne top-mast tackles | 2.50 | 5 |
| 8 | Mizne top-mast shrouds | 5 | 40 |
| 1 | Mizne top-mast tie | 5 | 5 |
| 10 | Puttox of the mizne top-mast shrouds | 18 | 18 |
| 2 | Mizne-top-mast parrel ropes | 1.50 | 3 |
| 127 | | | 1006 |

# 5. Cordage of 3 inches $\frac{30}{100}$ parts.

| | | | |
|---|---|---|---|
| 1 | Sprit-sail top-mast tie | 4 | 4 |
| 2 | Main-sail mart-lines falls | 37 | 74 |
| 2 | Main-braces | 30 | 60 |
| 8 | Main-top-gallant shrouds | 4.50 | 36 |
| 2 | Sprit-sail garnets | 21 | 42 |
| 2 | Sprit-sail lifts | 21 | 42 |
| 2 | Pennants of the sprit-sail braces | 2.50 | 5 |
| 2 | Sprit-sail sheats | 20 | 40 |
| 1 | Hosse for the stay | 8 | 8 |
| 2 | Fore-top-sail clue-lines | 18 | 36 |
| 2 | Fore-sail boline bridles | 2.50 | 5 |
| 2 | Pennants for the fore-braces | 2.50 | 5 |
| 2 | Falls of the fore-top-mast running back-stayes | 20 | 40 |

Fore-

| | | Fathā | Fathā |
|---|---|---|---|
| 2 | Fore-top-maſt parrel ropes | 2 | 4 |
| 1 | Fore-top-maſt breſt rope | 3 | 3 |
| 6 | Main-ſail bunt-lines | 10 | 60 |
| 1 | Main-luffe tackle | 10 | 10 |
| 1 | Fall of the main-ſail bunt-lines | 64 | 64 |
| 1 | Main bouſing tackle | 10 | 10 |
| 2 | Lanniards of the main-yard hoſſes | 4 | 8 |
| 2 | Falls of the main-top-maſt running backſtaies | 23 | 46 |
| 2 | Main-top-maſt parrel ropes | 2.50 | 5 |
| 1 | Main-top-gallant-maſt-ſtay | 22 | 22 |
| 1 | Main-top-gallant top rope | 35 | 35 |
| 1 | Mizne tack | 8 | 3 |
| 2 | Croſſe jeck liſts | 18 | 36 |
| 1 | Mizne top-maſt top-rope | 16 | 16 |
| 16 | Lanniards of the fore ſhrouds | 4.50 | 72 |
| 2 | Fore-top-ſail clue lines | 36 | 72 |
| 44 | | | 846 |

## 6. Cordage of 3 inches $\frac{50}{100}$ parts.

| | | | |
|---|---|---|---|
| 1 | Sprit ſail halliards | 20 | 20 |
| 2 | Hoſſes for the ſprit-ſail ſheet | 2.50 | 5 |
| 2 | Falls of the boats tackle for the fore-maſt | 38 | 76 |
| 2 | Other falls | 27 | 54 |
| 2 | Fore-lifts | 25 | 50 |
| 2 | Fore-bolines | 18 | 36 |
| 2 | Pennnnts of the fore-top-maſt tackles | 2.50 | 5 |
| 2 | Pennants for the fore-top-maſt running back- (ſtayes | 3.50 | 7 |
| 8 | Fore-top-maſt ſhrouds | 7.50 | 60 |
| 10 | Fore-top-maſt puttox | 3 | 30 |
| 1 | Fore-top-ſail halliards | 43 | 43 |
| 2 | Falls of the boats tackle for the main-maſt | 43 | 86 |
| | | | Other |

| | | Fathā | Fathā |
|---|---|---|---|
| 2 | Other falles | 28 | 56 |
| 2 | Main lifts | 29 | 58 |
| 2 | Pennants of the main braces | 5 | 10 |
| 1 | Lanniards of the main-top-mast stay | 6 | 6 |
| 1 | Main-top-sail halliards | 55 | 55 |
| 2 | Main-top-sail bowlings | 53 | 66 |
| 6 | Main-top-sail bowling bridles | 3 | 18 |
| 2 | Main-top-sail clue-lines | 43 | 86 |
| 1 | Main-top-gallant tie | 5 | 5 |
| 2 | Runners of the mizne tackles | 10 | 20 |
| 1 | Mizne halliards | 24 | 24 |
| 1 | Mizne sheet | 16 | 16 |
| 59 | | | 892 |

## 7. Cordage of 4 inches $\frac{10}{100}$ parts.

| | | Fathā | Fathā |
|---|---|---|---|
| 2 | Sprit-sail standing lifts | 4.50 | 9 |
| 1 | Fore-top-mast stay | 15 | 15 |
| 2 | Fore-top-mast standing back stayes | 18 | 36 |
| 1 | Runner of the fore-top-sail halliards | 16 | 16 |
| 20 | Lanniards of the main-shrouds | 5 | 100 |
| 2 | Main bolines | 20 | 40 |
| 4 | Main-boline bridles | 3.50 | 14 |
| 1 | Main garnet fall | 36 | 36 |
| 2 | Pennants of the main-top-mast tackles | 3 | 6 |
| 10 | Main-top-mast shrouds | 8.50 | 85 |
| 2 | Pennants of the main-top-mast back-stayes | 9 | 18 |
| 2 | Main-top-mast standing back-stayes | 22 | 44 |
| 2 | Pennants of the main-top-sail braces | 2.50 | 5 |
| 1 | Main-top-mast brest rope | 8 | 8 |
| 2 | Pennants of the mizne tackles | 4.50 | 9 |
| 1 | Mizne jeere | 15 | 15 |
| 1 | Mizne parrel rope | 4 | 4 |
| 561 | | | 455 |

## 8. Cordage of 4 inches $\frac{50}{100}$ parts.

| | | Fathā | Fathz |
|---|---|---|---|
| 1 | Lanniard of the forestay | 5 | 5 |
| 10 | Mizne shrouds | 9.50 | 9.95 |
| 11 | | | 100 |

## 9. Cordage of 5 inches $\frac{50}{100}$ parts.

| | | | |
|---|---|---|---|
| 1 | Fore halliards | 37 | 37 |
| 3 | Fore parrel ropes | 3 | 9 |
| 1 | Luff-hook rope | 9 | 9 |
| 2 | Hosses for the fore-yard | 4 | 8 |
| 1 | Fall of the fore-top-mast top-rope | 22 | 22 |
| 1 | Main garnet guy | 10 | 10 |
| 1 | Fall of the main-top-mast-top-rope | 26 | 26 |
| 3 | Main parrel ropes | 4 | 12 |
| 2 | Hosses for the main-yard | 5 | 10 |
| 1 | Runner for the main-top-sail halliards | 18 | 18 |
| 1 | Fall of the main-top-rope | 28 | 28 |
| 10 | Main-top-mast puttox | 3.50 | 35 |
| 1 | Mizne stay | 19 | 10 |
| 28 | | | 234 |

## 10. Cordage of 6 inches $\frac{00}{100}$ parts.

| | | | |
|---|---|---|---|
| 2 | Pennants of the sprit-sail sheats | 4.50 | 9 |
| 2 | Fore-mast runners of the boats tackles | 17 | 34 |
| 2 | Other runners | 15 | 30 |
| 2 | Fore sheats | 30 | 60 |
| 1 | Fore-top-mast tie | 9 | 9 |

Main-

| | | Fath 2 | Fathā |
|---|---|---|---|
| 2 | Main maſt runners of the boats tackles | 18 | 36 |
| 2 | Other runners | 16 | 32 |
| 1 | Main top maſt ſtay | 16 | 16 |
| 14 | | | 226 |

## 11. Cordage of 6 inches $\frac{30}{100}$ parts.

| | | | |
|---|---|---|---|
| 2 | Fore top ſail ſheats | 26 | 52 |
| 1 | Lanniard of the main ſtay | 10 | 10 |
| 1 | Main halliards | 50 | 50 |
| 2 | Main jeers | 30 | 60 |
| 2 | Main ſheats | 36 | 72 |
| 1 | Pennant of the main garnet | 6 | 6 |
| 1 | Main top maſt tie | 10 | 10 |
| 1 | Mizne tie | 10 | 10 |
| 11 | | | 270 |

## 12. Cordage of 7 inches $\frac{00}{100}$ parts.

| | | | |
|---|---|---|---|
| 1 | Sling of the ſprit ſail yard | 3 | 3 ¾ |
| 4 | Pennants of the fore tackles | 4.50 | 18 |
| 6 | Fore ſhrouds | 12 | 192 |
| 1 | Fore breſt rope | 3 | 3 |
| 1 | Coller of the fore ſtay about the boſprite | 4 | 4 |
| 1 | Main breſt rope | 4 | 4 |
| 2 | Main top ſail ſheats | 30 | 60 |
| 1 | Pennant of the fore top maſt top rope | 7 | 7 |
| 27 | | | 291 |

C

13. Cordage

## 13. Cordage of 7 inches $\frac{70}{100}$ parts.

|    |                                        | Fathā | Fathā |
|----|----------------------------------------|-------|-------|
| 8  | Woldings for the bousprite             | 6     | 48    |
| 1  | Fore tie                               | 16    | 16    |
| 2  | Fore tacks                             | 15    | 30    |
| 4  | Pennants of the main-tackles           | 5     | 20    |
| 20 | Main shrouds                           | 13    | 260   |
| 1  | Pennant for the many top mast top rope | 6     | 8     |
| 36 |                                        |       | 382   |

## 14. Cordage of 8 inches $\frac{10}{100}$ parts.

|   |           | Fathā | Fathā |
|---|-----------|-------|-------|
| 1 | Main tie  | 16    | 19    |
| 2 | Main tack | 18    | 36    |
| 3 |           |       | 52    |

## 15. Cordage of 13 inches $\frac{30}{100}$ parts.

|   |                                  | Fathā | Fathā |
|---|----------------------------------|-------|-------|
| 1 | Fore stay                        | 15    | 15    |
| 1 | Coller about the stem            | 7     | 7     |
| 1 | Pennant of the main winding tackle | 7   | 7     |
| 3 |                                  |       | 29    |

## 16. Cordage of 17 inches $\frac{70}{100}$ parts.

|   |          | Fathā | Fathā |
|---|----------|-------|-------|
| 1 | Main stay | 20   | 20    |

Here followeth another Table of some other Cordage and Ropes that are of necessity in a ship, and are here put down for their sizes and lengths according to the former Table of Cordage for the fore-propounded ship.

Stoppers.

| | | Fathã | Fathã |
|---|---|---|---|
| 2 | Stoppers at the bits of 6. 30 inches | 5 | 10 |
| 2 | Lanniards of 2. 50 inches | 6 | 12 |
| 3 | Stoppers at the bough of 4.50 inches | 8 | 16 |
| 4 | Shanck panters of 4.50 inches | 4 | 16 |
| 1 | Shank panter for the stream anker 4.50 inches | 4 | 4 |
| 1 | Stopper for it 3.80 inches | 4 | 4 |
| 2 | Can buy ropes 3.80 inches | 60 | 120 |
| 2 | For Robins and Enrins of 2 inches 1 coile | | |
| 5 | Lead lines | | |
| 2 | Catt ropes of 3.80 inches | 4 | 8 |
| 1 | Pennant of the fish tackle 5.50 inches | 5 | 5 |
| 1 | Fall of the fish tacle 3.50 inches | 16 | 16 |
| 1 | Long boats Davids seazing 4.50 inches | 3 | 3 |
| 1 | Long boats panter 5 inches | 4 | 4 |
| 1 | Pinnasses Davids seazing 3.50 inches | 3 | 3 |
| 1 | Pinnasses panter 4 inches | 4 | 4 |
| 1 | Pinnasses panter 3 inches | 3 | 3 |
| | Hosses for the head 4 inches | 5 | 5 |
| 1 | Ladder for the bosprite 3.50 inches | 10 | 10 |
| | Lanniards of one inch 90 parts | 5 | 5 |
| 1 | Buy rope for the stream anchor 4 inches | 12 | 12 |
| 1 | Buy rope for the Kedge anchor 3. inches | 12 | 12 |
| 2 | Pair of but slings 4 inches | 3 | 3 |
| 2 | Pair of hogshed slinges 3 inches | 3 | 3 |
| 1 | Ladder for the poop 2 inches | 12 | 12 |
| 6 | Winding tackle blocks | | |
| 3 | Buy ropes of 5 inches | 12 | 36 |
| | For new bolt rope a 5 inch cablet | | |
| | A guesse rope 4 inch cablet | | |
| | Cackling of 3 or 4 inches | | |

C 2                                    Another

## Another Table of the Lengths and Thicknesse of the Masts and Yards of a Ship that is 86 Foot by the Keele, 33 Foot at the Middship Beam, and 15 Foot in Hold ; which is of the burthen of about 448 Tun.

*Each Grand mast, and its smaller Masts and Yards put together.*

| | | Length in Feet | Thickn. in Inch. |
|---|---|---|---|
| 1 | The main mast | 96 | 32 |
| | The main yard | 83 | 27.50 |
| | The main top mast | 49 | 16 |
| | The main top mast yard | 41 | 12.50 |
| | The main top gallant mast | 25.50 | 9 |
| | The main top gallant yard | 20.50 | 7 |
| 2 | The fore mast | 85 | 28.50 |
| | The fore yard | 71 | 23 |
| | The fore top mast | 42.50 | 15 |
| | The fore top mast yard | 35 | 10.50 |
| | The fore top gallant mast | 21.50 | 7 |
| | The fore top gallant yard | 18 | 5.50 |
| 3 | The bosprite | 76 | 25 |
| | The sprit sail yard | 66 | 18 |
| | The sprit sail top mast | 18 | 5.50 |
| | The sprit sail top sail yard | 16.50 | 4.50 |
| 4 | The mizne mast | 59 | 19.50 |
| | The mizne yard | 58 | 18 |
| | The crosse jeck yard | 38 | 8.50 |
| | The minze top mast | 31 | 9 |
| | The mizne top mast yard | 23 | 7 |

A

A *Table* of the names, the number, the bigneſſe, and the lengths, of each Cordage for Aparrelling, belonging to each Maſt of the forepropounded Ship of 448 Tun.

## 1. Cordage belonging to the Main maſt.

| | | Inches | Fatħã | Fatħã |
|---|---|---|---|---|
| 1 | Main ſtay | 16 | 19 | 19 |
| 2 | Coller about the Stem | 12 | 6 | 6 |
| 2 | Main tacks | 7.50 | 17 | 34 |
| 1 | Main tie | 7.50 | 15 | 15 |
| 20 | Main ſhrouds | 7 | 12.50 | 250 |
| 1 | Main breſt rope | 6.50 | 3.50 | 3.50 |
| 4 | Pennants of the main tackles | 7 | 4.50 | 18 |
| 1 | Pennant of the main winding tackle | 12 | 7 | 7 |
| 1 | Pennant of the main Garnet | 6 | 6 | 6 |
| 2 | Main ſheats | 6 | 34 | 68 |
| 2 | Main Jeers | 6 | 28.50 | 57 |
| 1 | Main Halliards | 6 | 46 | 46 |
| 1 | Lanniard of the main ſtay | 6 | 9 | 9 |
| 2 | Main maſt runners of the boats tack | 5.50 | 16 | 32 |
| 2 | Other Runners | 5.50 | 15 | 30 |
| 1 | Fall of the main top rope | 5 | 24 | 24 |
| 2 | Hoſſes for the main yard | 5 | 4.50 | 9 |
| 3 | Main parrel ropes | 5 | 3.50 | 10 |
| 1 | Main Garnet Guy | 5 | 9 | 9 |
| 1 | Main Garnet fall | 4 | 33 | 33 |
| 4 | Main boline bridles | 4 | 3.50 | 14 |
| 2 | Main bolines | 4 | 19.50 | 39 |
| 20 | Lanniards of the main ſhrouds | 4 | 4.50 | 90 |
| 2 | Pennants of the main braces | 3.50 | 4.50 | 19 |

Main

|   |   | Inche | Fathā | Fathā |
|---|---|---|---|---|
| 2 | Main lifts (maſt | 3.50 | 27.50 | 55 |
| 2 | Falls of the boats tackles for the main | 3.50 | 40 | 80 |
| 2 | Other falls | 3.50 | 26.50 | 53 |
| 2 | Lanniards of the main yard hoſſes | 3 | 3.50 | 7 |
| 1 | Main bouſing tackle | 3 | 9 | 9 |
| 1 | Fall of the main ſail bunt lines | 3 | 61 | 61 |
| 1 | Main luffe tackle | 3 | 9 | 9 |
| 6 | Main ſail bunt lines | 3 | 10 | 60 |
| 2 | Main braces | 3 | 27.50 | 55 |
| 2 | Main ſail martlines fals | 3 | 36.50 | 73 |
| 4 | Main ſail mart line legs | 2.50 | 9 | 36 |

103

## 2. Cordage belonging to the main top maſt.

|   |   | Inche | Fathā | Fathā |
|---|---|---|---|---|
| 1 | Pennant of the main top maſt top rope | 6.50 | 7 | 7 |
| 2 | Main top ſail ſheats | 6.50 | 27.50 | 55 |
| 1 | Main top maſt tie | 6 | 9 | 9 |
| 1 | Main top maſt ſtay | 5.50 | 14 | 14 |
| 2 | Main top maſt clue lines | 3.50 | 40 | 80 |
| 10 | Main top maſt puttox | 5 | 3.50 | 35 |
| 1 | Runner for the main top ſail halliards | 5 | 16 | 16 |
| 1 | Main top maſt breſt rope | 4 | 3.50 | 3.50 |
| 2 | Pennants of the main top ſail braces | 4 | 2.50 | 5 |
| 2 | Main top maſt ſtanding back ſtais | 4 | 20.50 | 41 |
| 2 | Pennants of the main topmaſt back ſtais | 4 | 8 | 16 |
| 10 | Main topmaſt ſhrouds | 4 | 8 | 80 |
| 2 | Pennants of the main top maſt tackles | 4 | 2.50 | 5 |
| 2 | Main top ſail clue lines | 3.50 | 40 | 80 |
| 6 | Main top ſail boline bridles | 3.50 | 2.50 | 15 |
| 2 | Main top ſail bolines | 3.50 | 31 | 62 |
| 1 | Main top ſail halliards | 3.50 | 50 | 50 |
| 1 | Lanniards of the main top maſt ſtay | 3.50 | 6 | 6 |

Main

| | | Inches | Fathā | Fathā |
|---|---|---|---|---|
| 2 | Main top maſt parrel ropes | 3 | 2.50 | 5 |
| 2 | Falls of the main topmaſt running back | 3 | 22 | 44 |
| 2 | Main top ſail bunt lines fals (ſtais | 2.50 | 20 | 40 |
| 2 | Main top ſail buntline legs | 2.50 | 11 | 22 |
| 2 | Main top ſail lifts | 2.50 | 28 | 56 |
| 2 | Lanniards of the main top maſt back | 2.50 | 6 | 12 |
| 2 | Falls of the main top maſt tackles (ſtais | 2.50 | 17.50 | 35 |
| 2 | Main top ſail leech lines | 2 | 13.50 | 27 |
| 2 | Main top-ſail braces | 2 | 27.50 | 55 |
| 10 | Lanniards of the main top maſt ſhrouds | 2 | 3 | 30 |
| 1 | Fall of the main top maſt top rope | 5 | 24 | 24 |
| 78 | | | | |

## 3. Cordage belonging to the main top gallant maſt.

| | | Inches | Fathā | Fathā |
|---|---|---|---|---|
| 1 | Main top gallant tie | 3.50 | 4.50 | 4.50 |
| 1 | Main top gallant toprope | 3 | 34 | 34 |
| 1 | Main top gallant maſt ſtay | 3 | 16 | 16 |
| 8 | Main top gallant maſt ſhrouds | 3 | 4.50 | 36 |
| 2 | Main top gallant parrel ropes | 2.50 | 1.50 | 3 |
| 8 | Main top gallant puttox | 2.50 | 2 | 16 |
| 1 | Main top gallant halliards (ſtais | 2.50 | 42 0 | 42 |
| 2 | Pennants of the main top gallant back | 2.50 | 2.5 | 5 |
| 2 | Pennants of the main top gallant tackles | 2.50 | 3 | 6 |
| 2 | Pennants of the main top gallant bra- | 2 | 1.50 | 3 |
| 2 | Main top gallant clue lines (ces | 2 | 28.50 | 57 |
| 2 | Main top gallant bolines | 1.50 | 27.50 | 55 |
| 2 | Main top gallant braces | 1.50 | 32 | 64 |
| 2 | Main top gallant lifts | 1.50 | 27.50 | 55 |
| 2 | Falls of the main top gallant back ſtais | 1.50 | 23 | 46 |
| 2 | Falls of the main top gallant tackles | 1.50 | 8 | 16 |
| 8 | Main top gallant lanniards | 1.50 | 2 | 16 |
| 4 | Main top gallant boline bridles | 1.50 | 1.25 | 5 |
| 1 | Main flagſtaffe ſtay | 1.50 | 13 | 13 |
| 53 | | | | |

## 4. Cordage belonging to the Fore Maſt.

| | | Iaches | Fnthm̃ | Fa:tᵻ |
|---|---|---|---|---|
| 1 | Fore ſtay | 12 | 14 | 14 |
| 2 | Fore tacks | 7 | 14.50 | 29 |
| 1 | Fore tie | 7 | 16 | 16 |
| 1 | Coller of the ſtay about the boſprite | 6.50 | 4 | 4 |
| 1 | Fore breſt rope | 6.50 | 2.50 | 2.50 |
| 12 | Fore ſhrouds | 6.50 | 11.50 | 138 |
| 4 | Pennants of the fore tackles | 6.50 | 4 | 16 |
| 2 | Fore maſt runners of the boats | 5.50 | 15 | 30 |
| 2 | Other runners (tackles | 5.50 | 14 | 28 |
| 2 | Fore ſheats | 5.50 | 7.50 | 15 |
| 2 | Hoſſes for the fore yard | 5 | 3.50 | 7 |
| 1 | Luffe hook rope | 5 | 8 | 8 |
| 3 | Fore parrel ropes | 5 | 3 | 9 |
| 1 | Fore halliards | 5 | 34 | 34 |
| 1 | Lanniard of the fore ſtay | 4.50 | 6 | 6 |
| 2 | Fore bolines | 3.50 | 17 | 34 |
| 2 | Fore Lifts | 3.50 | 23 | 46 |
| 2 | Fore maſt falls for the Boats tackles | 3.50 | 36.50 | 73 |
| 2 | Other Falls | 3.50 | 25 | 50 |
| 12 | Lanniards of the fore ſhrouds | 3 | 5 | 60 |
| 2 | Pennants of the fore braces | 3 | 2.50 | 5 |
| 2 | Fore ſail Boline Bridles | 3 | 2.50 | 5 |
| 2 | Fore braces | 2.50 | 17 | 34 |
| 5 | Fore ſail bunt lines | 2.50 | 18 | 90 |
| 2 | Fore ſail martline Falls | 2.50 | 33 | 66 |
| 2 | Lanniards of the hoſſes for the fore- | 2 | 7 | 14 |
| 4 | Fore ſail Martlines legs (ya:d | 2 | 6.50 | 26 |

5. Cordage

## 5. Cordage belonging to the fore top maſt.

| | | Inches | Fathã | Fathã |
|---|---|---|---|---|
| 1 | Pennant of the fore top maſt top rope | 6.50 | 6 | 6 |
| 2 | Fore top ſail ſheats | 6 | 24 | 48 |
| 1 | Fore top maſt tie | 5.50 | 7.50 | 7.50 |
| 1 | Fall of the fore top maſt top rope | 5 | 20.50 | 41 |
| 1 | Runner of the fore top ſail halliards | 4 | 13.50 | 13.50 |
| 2 | Fore top maſt ſtanding backſtais | 4 | 17 | 34 |
| 1 | Fore top maſt ſtay | 4 | 14.50 | 14.50 |
| 8 | Fore top maſt ſhrouds | 3.50 | 7.50 | 60 |
| 8 | Fore top maſt puttox (ning back ſtais | 3.50 | 3 | 24 |
| 2 | Pennants of the fore top maſt run- | 3.50 | 3.50 | 7 |
| 2 | Pénants of the fore top maſt tackles | 3.50 | 2.50 | 5 |
| 2 | Fore top ſail clue lines | 3 | 34 | 68 |
| 1 | Fore top maſt breſt rope | 3 | 2.50 | 2.50 |
| 2 | Fore top maſt parrel ropes | 3 | 2 | 4 |
| 2 | Fals of the fore top maſt running | 3 | 19.50 | 39 |
| 2 | Fore top ſail clue lines (back ſtais | 3 | 17 | 34 |
| 1 | Lanniard of the fore top maſt ſtay | 2.50 | 5.50 | 5.50 |
| 2 | Fore top ſail bunt lines | 2.50 | 11.50 | 21 |
| 2 | Fore top ſail bolines | 2.50 | 30 | 60 |
| 2 | Pennants of the fore top ſail braces | 2.50 | 2.50 | 5 |
| 2 | Falls of the fore top maſt back ſtais | 2.50 | 5 | 10 |
| 2 | Fore top ſail lifts | 2.50 | 19.50 | 39 |
| 4 | Fore top ſail boline bridles | 2 | 2.50 | 10 |
| 2 | Fore top ſail braces | 2 | 25 | 50 |
| 8 | Laniards for the fore top maſt ſhrou. | 2 | 2.50 | 20 |
| 2 | Fore top ſail leebh lines | 1.50 | 11.50 | 23 |
| 2 | Fore top maſt tackle falls | 1.50 | 15.50 | 31 |

67

## 6. Cordage belonging to the fore top gallant maſt.

| | | | | |
|---|---|---|---|---|
| 1 | Fore top gallant tie | | 2.50 | 4 | 4 |
| 1 | Fore top gallant ſtay | | 2.50 | 21 | 21 |

D

Fore

|   |                                              | Inches | Fathᵃ | Fathᵃ |
|---|----------------------------------------------|--------|-------|-------|
| 6 | Fore top gallant mast puttox                 | 2.50   | 1.50  | 9     |
| 1 | Fore top gallant top rope                    | 2.50   | 31    | 31    |
| 6 | Fore top gallant shrouds                     | 2.50   | 4     | 24    |
| 2 | Penants of the fore top gallant back         | 2.50   | 2.50  | 5     |
| 2 | Fore top gallant parrel ropes       (stais   | 2      | 1     | 2     |
| 6 | Fore top gallant lanniards                   | 2.50   | 2     | 12    |
| 2 | Fore top gallant clue lines                  | 1.50   | 25    | 50    |
| 2 | Fore top gallant bolines                     | 1.50   | 27.50 | 55    |
| 2 | Pennants of the fore top gallant             | 1.50   | 2     | 4     |
| 1 | Fore top gallant halliards        (braces    | 1.50   | 36    | 36    |
| 2 | Falls of the fore top gallant back           | 1.50   | 21    | 42    |
| 2 | Fore top gallant lifts             (stais    | 1.50   | 25    | 50    |
| 4 | Fore top gallant boline bridles              | 1.50   | 1.50  | 6     |
| 2 | Fore top gallant braces                      | 1.50   | 28.50 | 57    |

42

# 7. Cordage for the Bousprite.

|   |                                              | Inches | Fathᵃ | Fathᵃ |
|---|----------------------------------------------|--------|-------|-------|
| 8 | Mouldings for the bousprite                  | 7      | 5.50  | 44    |
| 1 | Sling of the spritsail yard                  | 6.50   | 2.50  | 2.50  |
| 2 | Pennants of the spritsail sheats             | 5.50   | 4.50  | 9     |
| 2 | Pennants of the spritsail crainlines         | 3      | 1     | 2     |
| 2 | Spritsail standing lifts                     | 4      | 4     | 6     |
| 2 | Hosses of the spritsail yard                 | 3.50   | 2     | 4     |
| 1 | Spritsail halliards                          | 3.50   | 19.50 | 39    |
| 1 | Hosse for the stay                           | 3      | 7     | 7     |
| 2 | Spritsail sheats                             | 3      | 19.50 | 39    |
| 2 | Pennants of the spritsail braces             | 3      | 2.50  | 5     |
| 1 | Fall of the spritsail crainlines             | 1.50   | 20.50 | 41    |
| 2 | Spritsail lifts                              | 1.50   | 5.50  | 11    |
| 2 | Spritsail garnets                            | 3      | 20.50 | 41    |
| 1 | Spritsail bunt line in two parts             | 2.50   | 24    | 48    |
| 2 | Spritsail clue lines                         | 2.50   | 12.50 | 25    |
| 2 | Spritsail braces                  (lifts     | 2.50   | 18    | 36    |
| 2 | Lanniards of the spritsail standing          | 2.50   | 2.50  | 7     |

35

8. Cordage

## 8. Cordage of the Spritsail Topmast.

| | | Inches | Fathā | Fathā |
|---|---|---|---|---|
| 1 | Spritsail top mast tie (tackles | 3 | 3.50 | 3.50 |
| 2 | Pennants of the spritsail top mast | 2.50 | 1.50 | 3 |
| 2 | Spritsail top mast parrel ropes | 2.50 | 1 | 2 |
| 8 | Puttox of the spritsail top mast | 2.50 | 1.25 | 10 |
| 8 | Spritsail top mast shrouds (shrouds | 2.50 | 3.50 | 28 |
| 3 | Pennants of the spritsail top sail crain | 2.50 | 3 | 9 |
| 2 | Spritsail top sail clue lines (lines | 1.50 | 12.50 | 25 |
| 2 | Spritsail top sail braces (braces | 1.50 | 11.50 | 23 |
| 2 | Pennants of the spritsail top sail | 1.50 | 1.25 | 2.50 |
| 1 | Fall of the spritsail topsail crainlines | 1.50 | 41 | 41 |
| 2 | Spritsail top sail lifts | 1.50 | 5.50 | 11 |
| 1 | Spritsail top sail halliards | 1.50 | 7 | 7 |
| 2 | Falls of the spritsail top mast tackles | 1.50 | 7 | 14 |
| 8 | Lanniards of the spritsail top mast (shroud | 1.50 | 7 | 16 |

44

## 9. Cordage of the Mizne mast.

| | | | | |
|---|---|---|---|---|
| 1 | Mizne tie | 6 | 8 | 8 |
| 1 | Mizne stay | 5 | 10 | 10 |
| 10 | Mizne shrouds | 4.50 | 9 | 90 |
| 2 | Mizne parrel rope | 4 | 3.50 | 3.50 |
| 1 | Mizne tack | 3 | 3 | 3 |
| 1 | Mizne sheat | 3.50 | 15 | 15 |
| 1 | Mizne halfiards | 3.50 | 22 | 22 |
| 2 | Runners of the mizne tackles | 3.50 | 9 | 18 |
| 1 | Mizne bolines | 2.50 | 5.50 | 5.50 |
| 1 | Mizne trusse | 2.50 | 14 | 14 |
| 2 | Falls of the mizne tackles. | 2.50 | 36 | 36 |

| | | Inches | Fathā | Fathā |
|---|---|---|---|---|
| 10 | Lanniards for the Mizne shrouds | 2 | 3 | 30 |
| 8 | Mizne brails | 2 | 9 | 72 |
| 2 | Pennants of the mizne tackles | 4 | 2 | 5 |
| 1 | Mizne jeere, | 4 | 13.50 | 13.50 |

43

## 10. Cordage of the Crosse jeck yard.

| | | | | |
|---|---|---|---|---|
| 2 | Crosse jeck lifts | 3 | 17 | 34 |
| 2 | Slings for the crosse jeck yard | 2 | 2 | 4 |
| 2 | Pennents of the crosse jeck braces | 2 | 2 | 4 |
| 2 | Crosse jeck braces . | 1.50 | 23 | 46 |

8

## 11. Cordage of the mizne top mast.

| | | | | |
|---|---|---|---|---|
| 1 | Mizne top mast top rope | 3 | 15 | 15 |
| 2 | Mizne top mast parrel ropes | 2.50 | 1.50 | 3 |
| 8 | Puttox of the mizne top mast shrouds | 2.50 | 2 | 16 |
| 1 | Mizne top mast tie | 2.50 | 5 | 5 |
| 8 | Mizne top mast shrouds | 2.50 | 5 | 40 |
| 2 | Pénants of the mizne top mast tackles | 2.50 | 2.50 | 5 |
| 2 | Mizne top sail clue lines | 2 | 16 | 32 |
| 1 | Mizne top sail halliards in 3 parts | 2 | 32 | 32 |
| 2 | Pénāts of the mizne topsail crain lin. | 2 | 1.50 | 3 |
| 2 | Pennants of the mizne topsail braces | 1.50 | 1.50 | 3 |
| 6 | Mizne topsail boline bridles | 1.50 | 1.25 | 7.50 |
| 1 | Fall of the mizne topsail crain lines | 1.50 | 41 | 41 |
| 2 | Mizne top mast tackle falls | 1.50 | 10 | 20 |
| 2 | Mizne top sail braces | 1.50 | 19.50 | 39 |
| 2 | Mizne top sail bolines | 1.50 | 14.50 | 29 |
| 8 | Mizne top sail lanniards | 1.50 | 2 | 16 |

50

Here followeth another Table of some other Cordage and Ropes that are of necessity in a ship, and are here put down for their sizes and lengths according to the last foregoing Table of Cordage for the last propounded ship of 448 Tun.

| | | Inches | Fathā | Fat hā |
|---|---|---|---|---|
| 2 | Stoppers at the bits of 6 inches | 6 | 4.50 | 9 |
| 2 | Lanniards of 2.50 inches | 2.50 | 5.50 | 11 |
| 2 | Stoppers at the Bough of 4 inches | 4 | 7 | 14 |
| 4 | Shank panters of 4 inches | 4 | 3 | 12 |
| 1 | Shank panters for the stream anchor | | 3 | 3 |
| 1 | Stopper for it        (3.50 inches | | 3 | 3 |
| 2 | Can buy ropes | 3.50 | 57 | 114 |
| | For Robbins and erings 1 small coil | 2 | | |
| 6 | Lead lines | | | |
| 2 | Catt ropes | 3.50 | 3 | 6 |
| 1 | Pennant of the fish tackle | 5 | 4.50 | 4.50 |
| 1 | Fall of the fish tackles | 2.50 | 14 | 14 |
| 1 | Long boats Davids seasing | 3.50 | 2.50 | 2.50 |
| 1 | Long boats panter | 4.50 | 3.50 | 3.50 |
| 1 | Pinasses Davids seasing | 3 | 2.50 | 2.50 |
| 1 | Pinasses panter | 3.50 | 3.50 | 3.50 |
| 1 | Jellewats panter | 2.50 | 2.50 | 2.50 |
| | Hosses for the head | 3.50 | 4.50 | 4.50 |
| 1 | Ladder for the bosprite | 3 | 9 | 9 |
| | Lanniards of | 1.50 | 4.50 | 4.50 |
| 1 | Buy rope for the stream anchor | 3.50 | 10 | 10 |
| 1 | Buy rope for the kedge anchor | 2.50 | 10 | 10 |
| 2 | Pair of but slings | 3.50 | 2.50 | 2.50 |
| 2 | Pair of hogshed slings | 2.50 | 2.50 | 2.50 |
| 1 | Ladder for the Poop | 3.50 | 9 | 9 |
| 6 | Winding tackle blocks | | | |
| 3 | Buy ropes of | 4.50 | 11 | 33 |
| 2 | For new bolt ropes a Cablet of | 4.50 | | |
| | For a guesse rope a Cablet of | 3.50 | | |
| | Cackling of 3 inches or | 3.50 | | |

The

THE first thing to begin with is to find the length of the Main maft of any Ship, whofe length at the Keel, the breadth at the Beam, and the depth in Hold is known, which may be done two feverall wayes,

The firft, which is the beft, is to adde the breadth and the depth of the fhip together, and double it; and divide the product by 3. the quotient is the length of the Main maft in Yards.

*Example*, In the fecond fhip I have propounded, the breadth is 33, the depth is 15, their fum is 48, that doubled is 96, which divided by 3. the quotient is 32, that is 96 foot. Or it is all one to adde the breadth and depth together, and double it, and the fum is the length in feet.

A fecond way is to adde the length of the Keyle, the breadth of the beam, and the depth together, and to that fum adde the difference between the breadth and twice the depth, and multiply the laft fum by the breadth at the Beam, the product whereof divide by the former laft fum, and the quotient is the length of the main maft in yar ls.

*Example*, In the fhip laft propounded, the length of the Keele 86, the breapth of the beam 33, the depth 15, their fum is 134, unto which adde the difference between the breadth and twice the depth, which is 3, the fum is 137, which multiplied by 33, the breadth, the product is 4521, which divided by 137, the quotient is 33, which is a yard more then it was the former way, but it is too much, and therefore the former way is the better way. Notwithftanding, either of thefe wayes, the builder of the fhip may fee fome juft caufe, wherefore he will not have the main maft of his fhip fo long as the fhorteft of thefe two wayes doth allow, but it may be one yard or two fhorter. It will be demanded what the former two Tables that I have put down are ufeful for. I anfwer, very ufeful, becaufe the Mafts and

Yards that I have put down in those Tables (for their lengths) are in such a proportion one to another, that whatsoever length the Main mast of any ship be propounded to be, the rest ought to follow in order according to that proportion that I have there set downe; or else, the ship, when it is masted, Yarded, and Rigg'd, will not be uniform, or rather (if you please) not ship-shapen, nor yet so good to sail.

And accordingly all the rigging also may be fitted according to that proportion, or if one mast alone should be altered different from this proportion; yet all things belonging to that Mast (as smaller Masts and Yards, and all Cordage) shall all be found from the former Tables, from either of them, by the Instrument nominated in the Title page, only by inspection.

Having found the length of the main mast, as before is shewed, and the like may be done for any other ship, we may by the help of either of the two Tables, which I have here before set down, after the length of the main mast, and the thicknesse at the partners is found, the length and thicknesse of all the other masts and yards may be found by either of our former Tables, by the *Rule of Three*, because it is but a lineal proportion; but I shall onely make use of the Mariners Scale mentioned in the Titlepage, by which it may be done (as is aforesaid) by inspection, without altering the Scale, as I shall immediately shew.

But first I shall describe the Mariners scale, so much of it as is usefull in this businesse. It is the one halfe of a Geometricall Square, which is cut off in the Diagonall line, having each side divided into 100 equal parts, and an Index divided into the same equall parts moving upon a centre, so that if there be never so many things depending upon one proportion, they may be all found by once setting the Index by inspection, as all the things that we have now in question do.

*Example,* To find the length and thicknesse of all the masts and yards for a ship of 448 Tuns (having first the main mast,) by our Table of Masts and yards of a ship of 600 Tuns, the main mast of the first being 107 foot, and of the second 96 foot. Bring 96 of the base

of

of the Scale to fit with 107 of the Index of the Scale, and there ftay it faft, and look againft 93 the main yard of the firft, in the Index of the Scale, and in the bafe you fhall fee 83 the length of the main yard of the fecond, and againft 36 in the Index, the thicknefs of the main maft of the firft, and in the bafe you fhall fee 32 the thicknefs of the main maft of the fecond ; and fo proceed for all the reft, and you fhall find 27. 50 for the thickneffe of the main yard, and 49 for the length of the main top maft, and 16 the thickneffe, and 41 the length of the main top maft yard, and 12.50 inches the thickneffe, and 25.50 the length of the main top gallant maft, and 9 inches the thickneffe, and fo all the reft of the matts and yards their lengths and thickneffe, as you may fee it fet down in the Table before belonging to our fuppofed fhip of 448 Tun.

Now I will go forwards to find the fizes, the lengths, and the quantity of Cordage that will ferve to Apparel our fuppofed Ship completely, which fhall be performed with the fame eafe and fpeed that the mafts and yards were, the Scale remaining ftill unaltered.

Here note that I ſould have given the lengths of all the mafts and yards by a way that is ufed by fome from the main maft, and fo from one to another : but becaufe the way that I have here propounded is far more eafie and fpeedy, I make ufe of it.

Firft, for the fize of our cordage, we are to confider it is but a lineal proportion between the diameters of the two main mafts, which are 36 and 32, fo that if we fhall look againft 1 inch $\frac{40}{100}$ the firft fize Cordage of the fhip of 600 Tun in the index of the Scale, we fhall fee 1. 25 in the bafe for the firft fize for the fhip of 448 Tun, and for 1 inch, $\frac{6}{10}$ parts we fhall find one inch $\frac{4}{10}$ parts, & for 2 inches $\frac{3}{10}$ parts we fhall find 2 inches, and for 2 inches $\frac{2}{10}$ parts we fhall find 2 inches $\frac{95}{100}$ parts, and for 3 inches $\frac{3}{10}$ parts we fhall find 3 inches, and for 3 inches $\frac{2}{10}$ parts we fhall find 3 inches $\frac{1}{10}$ parts, and for 4 inches $\frac{1}{10}$ parts we fhall find 3 inches $\frac{5}{10}$, and for 4 inches $\frac{1}{10}$ parts, we fhall find 4 inches, and for 5 inches $\frac{4}{10}$ parts, we fhall find 5 inches, for 6 inches parts we fhall find 5 inches $\frac{4}{10}$ parts, for 6. inches $\frac{3}{9}$ parts we fhall find 5 inches $\frac{6}{10}$, for 7 inches oo parts we fhall find 6 inches $\frac{2}{10}$ parts,

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for 7 inches $\frac{2}{10}$ parts we shall find 7 inches, for 8 inches $\frac{3}{10}$ parts we shall find 7 inches $\frac{1}{10}$ parts, for 13 inches $\frac{1}{10}$ parts we shall find 12 inches, and for 17 inches $\frac{2}{10}$ we shall find 16 inches.

It it shall happen that any number be too long for the Scale, either in the size or length of any Cordage, we may do it by the half or the quarter of it, or one tenth part of it, as for example, our 4th. Cordage in our first Table of Cordage is 1006 fatham for a ship of 600 tun, how much must we have for the ship of 448 tun? look against $100\frac{1}{2}$ of the Index of the Scale, and in the base you shall see $89\frac{1}{2}$, which is $89\frac{.}{5}$ fatham, and so in like manner we may proceed to find the quantity of all the other sizes; as it follows : For the first size in the table is 313, for which we shall find 278; and for the second size, for 842 we shall find 752; and for the third size, for 443 we shall find 393; and for the fifth size for 846, we shall find 755; and for the 6th. size for 892, we shall find 791; and for the 7th. size for 455, we shall find 405; and for the 8th. size for 100, we shall find 84; and for the 9th. size for 234, we shall find 208; and for the 10th. size for 226; we shall find 201; and for the 11th. size for 270, we shall find 240; and for the 12 size for 291, we shall find 258; and for the 13th. size for 382 we shall find 340; and for the 14th. size for 52, we shall find 46; for the 15th. size for 29, we shall find 25 & an half; for the 16th. size for 20, we shall find 18. So now we have found the quantity of cordage of every size for the rigging of the supposed ship of 448 tun.

If it be objected, that there is too much variety of cordage for every ordinary ship, any man may go to the Table and take out the quantity of cordage of each size that he intends to make use of, and adde it into one summe, then by the Scale he may find what quantity will serve either for a bigger or a lesser ship then that Table is made for, as is plain by finding the quantities of each size before.

Next we will proceed to find the lengths of some particular Cordage, in which there is no difficulty at all, for the Scale remaining as it was at first, if we look for the length of any particular Cordage in the first or second Tables of Cordage, if it be for a lesser ship then that which is of 300 Tun, then look the length of the Cordage that is in

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the Table, in the Index of the Scale, and right against it you shall see the length of the Cordage required in the base of the Scale; or if it be for a greater then that of 600 or that of 448 you must look that in the Table in the base of the Scale, and right against it in the Index you shall see the length of the Cordage required.

*Example*, I would know what should be the length of the two fore top sail braces for our supposed ship of 448 tun. I look in the first Table of cordage, and find them to be in the third size cordage of two inches 3 tenth parts, and their lengths, both of them, to be 56 fatham, which I look in the Index of the Scale, and right against it in the base is 50 the length of the fore topsail braces for the ship of 448 tun, as you may see in the second Table of cordage: so likewise if you look for any other cordages length, you shall find it in the same manner, as you may make tryal from the one Table to the other, by either Scale, which is instruction sufficient for finding any thing of this kind, for any ship, and whatsoever may be done by proportion by the Marriners Scale, may be done by two sliding lines of numbers.

It remains that in the next place I say something concerning the sizing of cables.

Your sheat cable is commonly so many half inches about as your ship is breadth in feet at the mid ship beam.

Our supposed ship of 448 tun is 33 foot at the mid ship beam, therefore the sheat cable must be 16 inches and a half about. To find the sizes of the rest of the cables, it may be done by the weight of the Anchors in the manner following.

Suppose your sheat anchor be 18 hundred weight, and your cable be 16 inches and a half about, and you have another anchor of 11 100 weight, how many inches about shall be the cable for it?

To answer this and the like demands, there are two lines at the lower side of the Scale, the one of equal parts containing 3 & 5 parts, and the tens and fives drawn out, and is numbred at every 50 thus, 50. 100. 150, &c. the other line is of unequal parts, and begins at 1 and ends at 27.7 and is numbred to every unite, and each unite is divided from 1 to 10 by fives, and from 10 to 27.7 by tens, each unite into ten parts.

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First, because 11 and 18 are but small numbers, I double them and they are 22 and 36, and I look in the unequal parts for 16 and an half, and against it in the equal parts is 136, of which I take half (which is 68) because it is above 100. Then I bring 36 of the Index against 22 of the perpendicular side of the Scale, and stay the Index fast, and look against 68 of the Index, where I shall see 41 and a half of the perpendicular side of the Scale, which being doubled is 83, which I look in the equal parts, and against it in the unequal parts you shall see 12.8, which is 12 inches and 8 tenth parts, the circumference of a cable for an anchor of 11 hundred weight.

But cables may be also proportioned from the burthens of ships in this manner following :

Suppose a ship of 300 tun have a sheat cable of 15 inches about, what shall the circumference of a sheat cable for a ship of 448 ? because the numbers are great, I take the tenth part of each, and they are 30 and 46, then look 15 in the unequal parts, and against it in the equall parts is 112 and an half, the half of which is 56 and a quarter : so I bring 30 of the base of the Scale against 46 of the Index, and against 56 and a quarter of the base of the Scale, I see in the Index 75, which I double, and it is 150, which I look in the equall parts, and against it in the unequall parts is 17 and 3 tenths, which is 8 tenths of an inch more then it was the other way : but it is not the more unsafe for the ship to ride by if the hemp be good : and so the sizes of all the rest of the cables may be found from one ship to another, after the same manner.

Here it may be it will be objected that the stais of the middle masts may not hold in proportion according to the lengths of the middle masts in all ships, because the distance between the main mast and the fore mast may not be proportionable in all ships according to their lengths ; if it be so, yet the Scale performs it another way very easily and exactly.

1. *Example*, I suppose a ship of 75 foot by the Keel, the main mast is 84 foot, the depth in hold 13 foot, and 5 foot between the Decks, that i 18 foot, which taken out of 84, rests 66, the height of the mast

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above the Decks, and commonly the distance between the main mast and fore mast is three fifths of the ships keele, which in this is 45 foot, (and the distance between the main mast and the mizne mast is halfe as much as the distance between the main mast and the fore mast) but to proceed to find the length of the main stay, I looke upon the Scale where 66 of the base of the Scale doth intersect 45 of the perpendicular side of the Scale, and bring the edge of the Index to that intersection, and in the edge of the Index you shall see 80 foot, the length of the main stay besides the coller.

2 *Example*, in the second propounded ship of 86 foot by the keel, whose mast is 96 foot, the depth in hold 15 foot, and 5 foot and an helfe between decks, that is 20 foot and an halfe, which taken out of 96 rests 75 and an halfe, the height of the mast above the deck, three fifths of the keel is 51, the distance between the main mast and the fore mast, so I look upon the scale for the interesction of 75 and an halfe of the base of the Scale, and 51 of the perpendicular side, and bring the edge of the Index to it, and in the edge of the Index I see 91 foot, the length of the main stay without the Coller.

Thus I have finished what I intended for this businesse of Masting, Yarding, Apparelling, Anchoring, and Cableing of any ship whatsoever : but

I will farther shew by this following Table how you shall finde what weight of each size cordage you shall use for to Apparel any ship whatsoever, which Table shews how many fatham and odde feet of any Cordage there is in one hundred weight, from one inch to ten inches in circumference, to every tenth part of an inch.

| Inch | Part | Fathom and feet in one G Wel. | | Inch | Part | Fathom and feet in one G Weight | |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 405 | 0 | 3 | 1 | 50 | 3 |
| 1 | 2 | 338 | 0 | 3 | 2 | 47 | 1.50 |
| 1 | 3 | 289 | 0 | 3 | 3 | 44 | 3 |
| 1 | 4 | 249 | 0 | 3 | 4 | 42 | 0 |
| 1 | 5 | 216 | 3 | 3 | 5 | 39 | 3 |
| 1 | 6 | 191 | 0 | 3 | 6 | 37 | 1.50 |
| 1 | 7 | 169 | 0 | 3 | 7 | 35 | 3 |
| 1 | 8 | 150 | 0 | 3 | 1 | 33 | 4.50 |
| 1 | 9 | 135 | 0 | 3 | 9 | 31 | 4.50 |
| 1 | 0 | 121 | 3 | 4 | 0 | 30 | 1.50 |
| 2 | 1 | 111 | 0 | 4 | 1 | 29 | 0 |
| 2 | 2 | 100 | 3 | 4 | 2 | 27 | 3 |
| 2 | 3 | 92 | 2 | 4 | 3 | 26 | 1.50 |
| 2 | 4 | 84 | 3 | 4 | 4 | 25 | 0 |
| 2 | 5 | 77 | 3 | 4 | 5 | 24 | 0 |
| 2 | 6 | 72 | 0 | 4 | 6 | 23 | 0 |
| 2 | 7 | 67 | 0 | 4 | 7 | 22 | 0 |
| 2 | 8 | 62 | 3 | 4 | 8 | 21 | 0 |
| 2 | 9 | 58 | 0 | 4 | 9 | 20 | 1.50 |
| 3 | 0 | 54 | 0 | 5 | 0 | 19 | 3 |

| Inch | Part | Fa. feet in C.w | | Inch | Part | Fa. & feet in C. weig. | | Inch | Part | Fa. & feet in C. w-ie. | | Inch | Part | Fa & fee in C. we | | Part | Inch | Fa & fie in C. part | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 1 | 18 | 4 | 6 | 1 | 13 | 0.50 | 7 | 1 | 19 | 3.50 | 8 | 1 | 17 | 2.50 | 9 | 1 | 5 | 5 |
| 5 | 2 | 18 | 0 | 6 | 2 | 12 | 3.50 | 7 | 2 | 29 | 2 | 8 | 2 | 27 | 1.50 | 9 | 2 | 5 | 4.50 |
| 5 | 3 | 17 | 2 | 6 | 3 | 12 | 1 | 7 | 3 | 39 | 1 | 8 | 3 | 7 | 0 | 9 | 3 | 5 | 3.50 |
| 5 | 4 | 16 | 5 | 6 | 4 | 11 | 5 | 7 | 4 | 48 | 5.50 | 8 | 4 | 46 | 5 | 9 | 4 | 5 | 2.75 |
| 5 | 5 | 16 | 1 | 6 | 5 | 11 | 3 | 7 | 5 | 58 | 4 | 8 | 5 | 56 | 4.25 | 9 | 5 | 5 | 2 |
| 5 | 6 | 15 | 3 | 6 | 6 | 11 | 1 | 7 | 6 | 68 | 2.50 | 8 | 6 | 66 | 3.50 | 9 | 6 | 5 | 1.25 |
| 5 | 7 | 15 | 0 | 6 | 7 | 10 | 5.50 | 7 | 7 | 78 | 1 | 8 | 7 | 76 | 2.50 | 6 | 7 | 5 | 0.75 |
| 5 | 8 | 14 | 3 | 6 | 8 | 10 | 3 | 7 | 8 | 88 | 0 | 8 | 8 | 89 | 1.75 | 9 | 8 | 5 | 0.25 |
| 5 | 9 | 14 | 0 | 6 | 9 | 10 | 1 | 7 | 9 | 97 | 5 | 8 | 9 | 96 | 1 | 9 | 9 | 4 | 5.5 |
| 6 | 0 | 13 | 3 | 7 | 0 | 9 | 5.50 | 8 | 0 | 07 | 3.50 | 9 | 0 | 06 | 0 | 100 | | 4.5 | 0 |

I shall now give an example or two of the use of this Table, and so conclude, but first I shall set down a decimall Table of such numbers as are to be set to the right hand of the fathams, when you are to divide any quantity of fathams of cordage to know how many hundred weight it is. As for 1 foot you must take 15, for 1½ foot 25, for 2 foot 34, for 2½ foot 42, for 3 foot 5, for 3½ foot 6, for 4 foot 7, for 4½ foot 75, for 5 foot 8, for 5½ foot 86. Also you are to note, that if you set one figure before the fathams that are in the Table above, you must also set one Cipher to the right hand of your Dividend, or if you set two figures, you must set two Ciphers before your dividend.

1 *Example*, I desire to know how many hundred weight is in the 4 sixe Cordage in the first Table, which is 2 inches $\frac{2}{10}$ parts, and the number of fathams is 1006, and in this last table we find 92 fatham and 2 foot is in hne hundred weight, and (as is before directed) for 2 foot I am to take 34. so my divisor must be 92.34, and my dividend must be 1006.00, which being divided, the quotient will be 10 hundred weight, and about nine tenths of an hundred, for the weight of 1006 fathams of that cordage of 2 inches $\frac{2}{10}$ circumference.

2 *Example*, Suppose that a man may have a parcell of cordage of the sixth size in the first Table of 3 inches 9 tenth parts circumference, and the weight of it is 12 hundred, how shall I know whether it be enough to satisfie that which is required in that Table? I look in this last Table and find that 50 fatham and 3 foot weigheth one hundred weight, then according as in the first example, I put down for 3 foot 5, and then it will be 50.5, which I multiply by 12, and the product is 606 fatham, which is not so much as is there required, for it should be 829, so it is 223 fatham too little, which being divided by 50.5 will come to 4 hundred, one quarter, and more of the same sized cordage. And so I conclude.

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